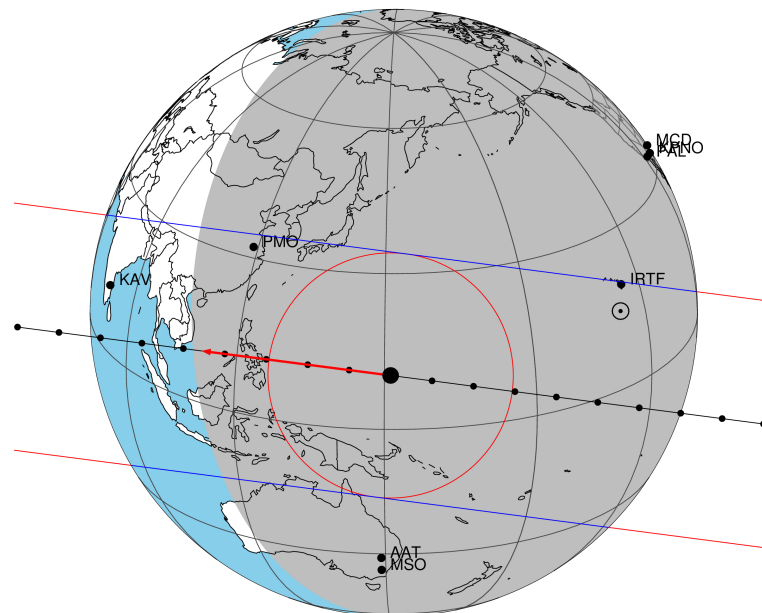


target : Titan
 target radius (km) : 2575.15
 C/A epoch : 2033-02-07T10:44:13.310
 Event type : Pgt
 : Titan occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3424479542243561600
 2Mass ID (if available) : 06010101+2235537

ICRS Star Coord at Epoch: 06h 01m 01.01860s +22:35:53.71673s
 RUWE (>1.4 is poor) : 1.28
 K magnitude : 11.156
 G magnitude : 14.529
 RP magnitude : 13.546
 BP magnitude : 15.521
 DUPflag : 0
 Distance (au) : 8.324
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -14.62
 Sun-Target sep (deg) : 131.72
 Sun-Moon sep (deg) : 30.83
 B (ring opening deg) : -26.65
 PA of pole (deg) : -5.69
 Pole direction: RA (deg): 39.48270
 Dec (deg): 83.42790
 C/A sky separation (") : 0.221
 C/A sky separation (km) : 1334.0
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp
 Observable events with sun below -5 deg and altitude above 5 deg

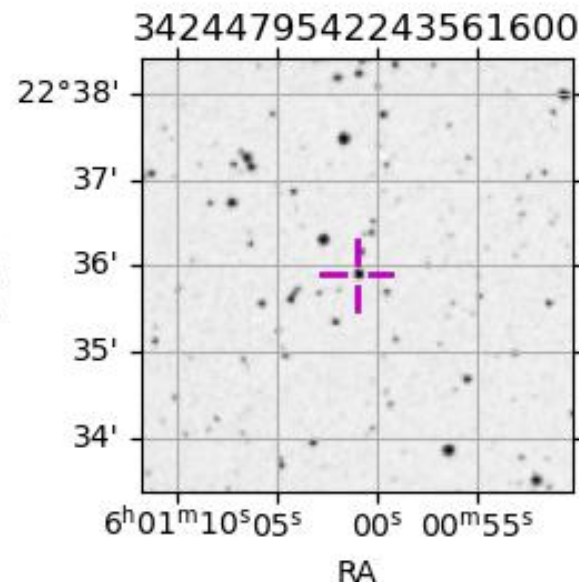
Titan 2033-02-07T10:44:13 K11.16 G14.53 dots 60.0 sec
 Pgt



2033-02-07T10:44:13.3100 α: 06 01 01.0186 δ: +22 35 53.717 C/A 0.218" PA 187.42 deg v_sky -14.63 km/s D 08.32 AU
 Credit: Styled after SORA/Lucky Star

Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+ +	FEB 07 10:46 - FEB 07 10:49	Pie
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+ +	FEB 07 10:38 - FEB 07 10:39	Pie
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8			Pnn
ESO	European Southern Obs. (3.6m)	-29.3	289.3			Pnn
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



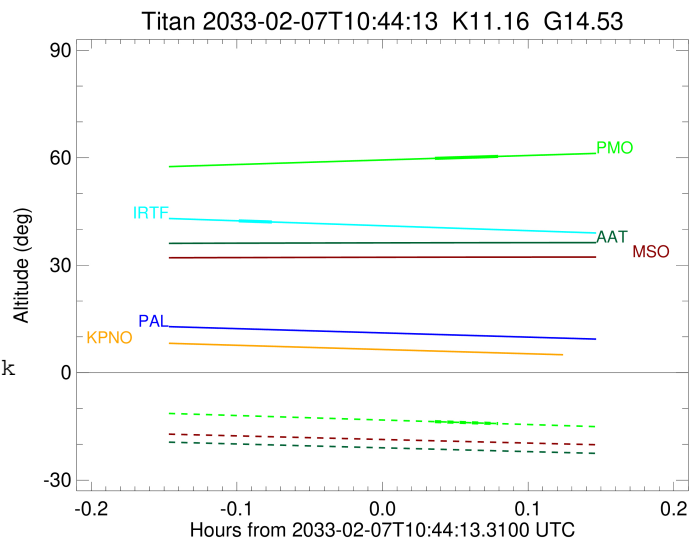
```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2033-02-07T10:47:40.890
Event type           : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code        : PMO
Location             : Purple Mtn Obs. Nanking
Latitude (deg)       : 32.06667
E. Longitude (deg)   : 118.82089
Altitude (km)        : 0.364
Gaia source ID       : 3424479542243561600
2Mass ID (if available) : 06010101+2235537
ICRS Star Coord at Epoch: 06h 01m 01.01860s +22:35:53.71673s
RUWE (>1.4 is poor) : 1.28
K magnitude          : 11.156
G magnitude          : 14.529
RP magnitude         : 13.546
BP magnitude         : 15.521
DUPflag             : 0
Distance (au)        : 8.324
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.62
Sun-Target sep (deg) : 131.72
Sun-Moon sep (deg)   : 30.89
B (ring opening deg) : -26.65
PA of pole (deg)     : -5.69
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation (") : 0.379
C/A sky separation (km) : 2289.5
NAIF SPICE kernels   : RAJobs_U111+rgf16.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
IAU_NEPTUNE_for_RINGFIT.tpc.BECAREFUL
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk

```

x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2033-02-07T10:46:22.162	59.81	-13.67	2575.1	60.13	60.15
Titan	E	2033-02-07T10:48:59.613	60.36	-14.22	2575.1	42.84	42.86



```

target                : Titan
target radius (km)   : 2575.15
C/A epoch            : 2033-02-07T10:38:58.280
Event type           : Pgt
: Titan occs: geocentric, topocentric
: Not a ringed target
Observer code        : IRTF
Location             : Mauna Kea/IRTF
Latitude (deg)       : 19.82622
E. Longitude (deg)   : 204.52800
Altitude (km)        : 4.168
Gaia source ID       : 3424479542243561600
2Mass ID (if available) : 06010101+2235537
ICRS Star Coord at Epoch: 06h 01m 01.01860s +22:35:53.71673s
RUWE (>1.4 is poor) : 1.28
K magnitude          : 11.156
G magnitude          : 14.529
RP magnitude         : 13.546
BP magnitude         : 15.521
DUPflag             : 0
Distance (au)        : 8.324
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -14.62
Sun-Target sep (deg) : 131.72
Sun-Moon sep (deg)   : 31.78
B (ring opening deg) : -26.65
PA of pole (deg)     : -5.69
Pole direction: RA (deg): 39.48270
Dec (deg): 83.42790
C/A sky separation ("): 0.414
C/A sky separation (km): 2497.2
NAIF SPICE kernels   : RAJobs_U111+rgf16.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
IAU_NEPTUNE_for_RINGFIT.tpc.BECAREFUL
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk

```

x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Titan	I	2033-02-07T10:38:16.046	42.38	-85.40	2575.0	63.30	63.31
Titan	E	2033-02-07T10:39:40.518	42.05	-85.34	2575.1	53.05	53.07

